REVISIONS			
LTR	**DESCRIPTION**	**DATE**	**APPROVED**
A	Add tolerances “K” (±10 percent) and “M” (±20 percent). Editorial changes throughout.	16 OCT 01	K. Cottongim
B	Changes in accordance with NOR 5905-R001-02.	30 OCT 01	K. Cottongim
C	Change derating temperature to 25°C.	30 JAN 02	K. Cottongim
D	Changes IAW NOR 5905-R009-02 – paragraph 3.3.1, delete “table II” and substitute “3.3.1.1”.	16 JUL 02	K. Cottongim
E	Add requirements for termination finish (see 3.4); DoD policy corrections throughout.	12 DEC 02	K. A. COTTONGIM

Prepared in accordance with ASME Y14.100

Selected item drawing

REV STATUS OF PAGES																		
	REV	E	E	E	E	E	E											
	PAGES	1	2	3	4	5	6											

PMIC N/A	**PREPARED BY** Andrew R. Ernst	**DESIGN ACTIVITY:** **DEFENSE SUPPLY CENTER, COLUMBUS** **COLUMBUS, OH**
Original date of drawing 12 January 2001	**CHECKED BY** Andrew R. Ernst	**TITLE** RESISTOR, FIXED, FILM, CHIP, 1.5 WATT (MELF), FLAT CERAMIC PACKAGE, STYLE 2512
	APPROVED BY Kendall A. Cottongim	
	SIZE **A** / **CODE IDENT. NO.** **037Z3**	**DWG NO.** **01002**
	REV E	**PAGE** 1 **OF** 6

1. SCOPE

1.1 Scope. This drawing describes the requirements for a 1.5 watt, fixed, chip resistor (melf), 0.251 X 0.134, in a flat ceramic package.

1.2 Part or Identifying Number (PIN). The complete PIN is as follows:

01002	-	****	*
Drawing Number		Resistance value (see 3.3.1)	Tolerance (see 3.3.2)

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DoDISS) and supplement thereto, cited in the solicitation (see 6.2).

SPECIFICATIONS

DEPARTMENT OF DEFENSE

MIL-PRF-55342 - Resistors, Fixed, Film, Chip, Nonestablished Reliability, Established Reliability, Space Level, General Specification for.

STANDARDS

DEPARTMENT OF DEFENSE

MIL-STD-690 - Failure Rate Sampling Plans and Procedures.
MIL-STD-790 - Standard Practice for Established Reliability and High Reliability Qualified Products List (QPL) Systems for Electrical, Electronic, and Fiber Optic Parts Specifications.
MIL-STD-1285 - Marking of Electrical and Electronic Parts.

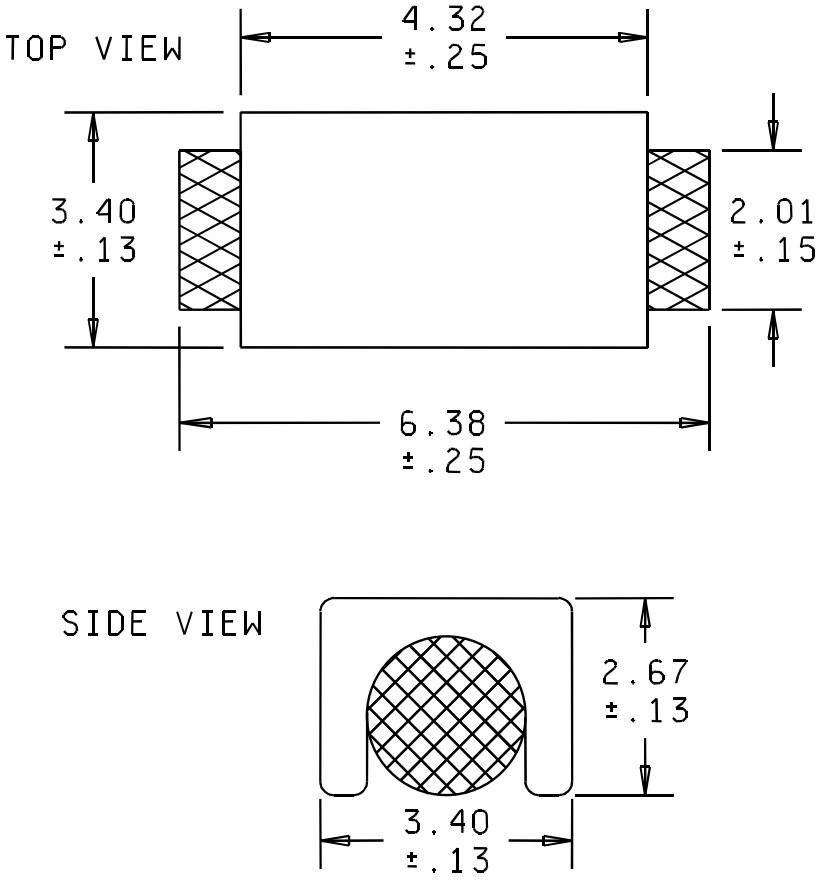
(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Document Automation and Production Service (DAPS), Building 4D (DPM-DODSSP), 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

2.2 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Item requirements. The individual item requirements shall be in accordance with MIL-PRF-55342 and as specified herein.

3.2 Interface and physical dimensions. The interface and physical dimensions shall be as specified herein (see figure 1).



Inches	mm
.005	0.13
.006	0.15
.010	0.25
.079	2.01
.105	2.67
.134	3.40
.170	4.32
.251	6.38

NOTES:
1. Dimensions are in millimeters.
2. Inch equivalents are given for general information only.

FIGURE 1. Chip resistor.

3.3 Electrical characteristics.

3.3.1 Resistance. The nominal resistance expressed in ohms is identified by four digits; the first three digits represent significant figures and the last digit specifies the number of zeros to follow. When the value of resistance is less than 100 ohms, or fractional values of an ohm are required, the letter "R" shall be substituted for one of the significant figures. The resistance value designations are shown in table I. Minimum and maximum resistance values shall be as specified in 3.3.1.1. Resistance values not listed in the “10 to 100” decade table of MIL-PRF-55342 for the appropriate resistance tolerance shall be considered nonconforming to the specification.

3.3.1.1 Resistance range. Minimum and maximum resistance shall be from 0.1 to 348 kilohms. See table I.

TABLE I. Resistance value designations.

Designation			Resistance ohms			
R100	to	R976 inclusive	0.10	to	0.976	inclusive
1R00	to	9R76 inclusive	1.00	to	9.76	inclusive
10R0	to	97R6 inclusive	10.0	to	97.6	inclusive
1000	to	9760 inclusive	100	to	976	inclusive
1001	to	9761 inclusive	1,000	to	9,760	inclusive
1002	to	9762 inclusive	10,000	to	97,600	inclusive
1003	to	3483 inclusive	100,000	to	348,000	inclusive

3.3.2 Resistance tolerance. The resistance tolerances shall be (F) ±1 percent, (G) ±2 percent, (J) ±5 percent, (K) ±10 percent, and (M) ±20 percent. Tolerances “K” and “M” signify that the resistor shall be an untrimmed body for enhanced pulse handling characteristics (see 6.4).

3.3.3 Rated power. The rated power shall be 1.5 watt from -55°C to +25°C. For operation at temperatures higher than +25°C, derated in accordance with figure 2 (see 6.5).

3.3.4 Temperature range. The temperature range shall be -55°C to +150°C.

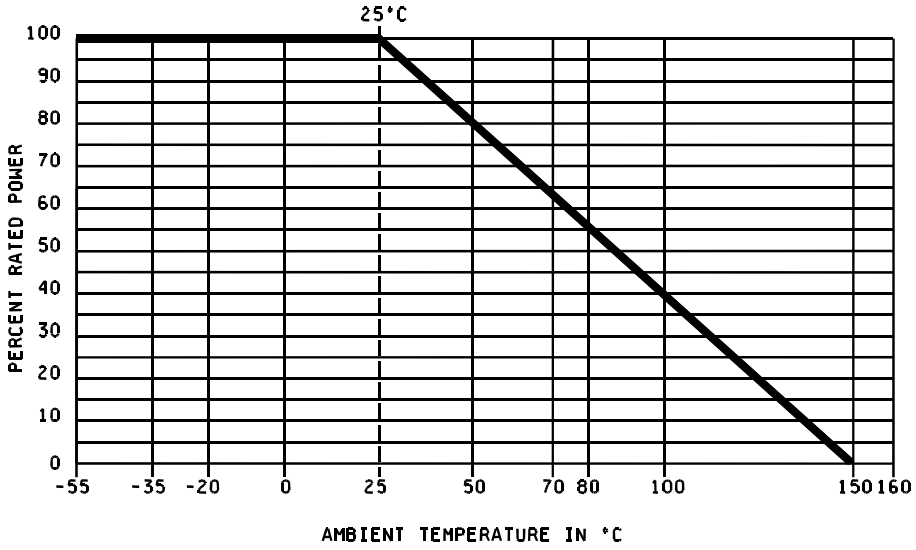


FIGURE 2. Derating curve for high ambient temperatures.

3.3.5 Resistance temperature characteristic. The resistance temperature characteristic shall be ±100 ppm/°C.

3.3.4 Voltage rating. The working voltage shall not exceed 350 volts.

3.4 Termination material. Termination material shall be in accordance with MIL-PRF-55342, code letter B.

3.5 Marking. Marking of the individual chip resistors is not required; however, each unit package shall be marked in accordance with MIL-STD-1285 and include the PIN as specified herein (see 1.2), the manufacturer's name or Commercial and Government Entity (CAGE) code, date, and lot codes.

3.6 Recycled, recovered, or environmentally preferable materials. Recycled, recovered, or environmentally preferable materials should be used to the maximum extent possible provided that the material meets or exceeds the operational and maintenance requirements, and promotes economically advantageous life cycle costs.

3.7 Certificate of compliance. A certificate of compliance shall be required from manufacturers requesting to be a suggested source of supply.

3.8 Workmanship. Resistors shall be uniform in quality and free from defects that will affect life, serviceability, or appearance.

4. VERIFICATION

4.1 Qualification inspection. Qualification inspection is not applicable to this document.

4.2 Reliability assurance program. The reliability assurance provisions specified in MIL-PRF-55342 and maintained in accordance with MIL-STD-790 are not applicable to this document.

4.3 Product level qualification. Product level qualification specified in MIL-PRF-55342 and MIL-STD-690 is not applicable to this document.

4.4 Conformance inspection.

4.4.1 Inspection of product for delivery. Inspection of product for delivery shall consist of group A (ER level) and group B inspections.

4.4.1.1 Group A inspection. Group A inspection (ER level) shall be in accordance with MIL-PRF-55342. PPM testing and verification as specified in MIL-PRF-55342 are not applicable to this document.

4.4.1.2 Group B inspection. Group B inspection shall be in accordance with MIL-PRF-55342.

4.4.1.2.1 Certification. The acquiring activity, at its discretion, may accept a certificate of compliance with group B requirements in lieu of performing group B tests (see 6.2d).

4.5 Visual and mechanical inspection. Resistors shall be examined to verify that the materials, design, construction, physical dimensions, marking, and workmanship are in accordance with the applicable requirements 3.2, 3.5, and 3.8.

4.6 Inspection of packaging. Inspection of packaging shall be in accordance with MIL-PRF-55342.

5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging shall be as specified in the contract or order (see 6.2) When actual packaging of materiel is to be performed by DoD personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activity within the Military Department or Defense Agency, or within the Military Department's System Command. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. The chip resistors described herein are intended to be used in thick or thin film circuits where microcircuitry is intended; also for use in surface mounting applications.

6.2 Ordering data. The contract or purchase order should specify the following:

a. Complete PIN (see 1.2).

b. Requirements for delivery: One copy of the conformance inspection data or certification of compliance that parts have passed conformance inspection with each shipment of parts by the manufacturer.

c. Requirements for packaging and packing.

d. Whether the manufacturer performs the group B tests or provides certification of compliance with group B requirements.

6.3 DSCC drawing 95006. Resistors of this DSCC drawing are of the same footprint without the ceramic packaging, and a power rating of 1 watt.

6.4 Untrimmed resistors. Parts ordered to tolerances “K” and “M” signify that the manufacturer shall provide resistors which have not been trimmed for tighter tolerances. Untrimmed resistors of this style have approximately 4 times the surge capability as trimmed resistors. Manufacturers generally use a select group of resistor rods and trim them to provides a great number of resistor values. Orders for untrimmed values not in stock could result in long lead times and large minimum order quantity to compensate for a custom ceramic body.

6.5 Rated power. Rated power for conformation inspection is performed at 70°C using a derated wattage of 1 watt.

6.6 Electrostatic charge. Under several combinations of conditions, these resistors can be electrically damaged, by electrostatic charges, and drift from specified value. Users should consider this phenomena when ordering or shipping resistors. Direct shipment to the Government is controlled by MIL-DTL-39032 that specifies a preventive packaging procedure.

6.7 Users of record. Coordination of this document for future revisions are coordinated only with the suggested sources of supply and the users of record of this document. Requests to be added as a recorded user of this drawing should be in writing to: Defense Supply Center, Columbus (DSCC), DSCC-VAT, Post Office Box 3990, Columbus, OH 43216-5000 or by telephone (614) 692-0553 or DSN 850-0553.

6.8 Suggested source of supply. A suggested source of supply is listed herein. Additional sources will be added as they become available. For assistance in the use of this drawing, contact Defense Supply Center, Columbus (DSCC), DSCC-VAT, Post Office Box 3990, Columbus, OH 43216-5000 or by telephone (614) 692-0553 or DSN 850-0553.

DSCC drawing PIN	Vendors similar designation or type number 1/	Vendor CAGE	Vendor's name and address
01002-*****	PPS-2	11502	International Resistive Company, Inc. P.O. Box 1860 Boone, NC 28607-1860

1/ Parts must be purchased to the DSCC PIN to assure that all performance requirements and tests are met.